

What is Claimed:

1. An ink composition comprising:
a dye;
a solvent for the dye; and
5 an additive comprising an amino acid or a derivative of an amino acid, the additive having a polarity greater than the polarity of the solvent, the additive preventing the dye from coalescing in the solvent thereby increasing the solubility of the dye in the solvent.
2. An ink composition as defined in claim 1, wherein the additive
10 comprises glycine, lysine, taurine, beta-alanine, betaine, or mixtures thereof.
3. An ink composition as defined in claim 1, wherein the additive comprises a sulfonic acid analog of an amino acid.
4. An ink composition as defined in claim 1, wherein the amino acid or the derivative of an amino acid is a zwitterion.
- 15 5. An ink composition as defined in claim 1, wherein the additive is present in the ink composition at a mole fraction of from about 0.004 to about 0.04.
6. An ink composition as defined in claim 1, wherein the additive is present in the ink composition at a mole fraction of from about 0.01 to about 0.02.
7. An ink composition as defined in claim 1, wherein the solvent
20 comprises water.
8. An ink composition as defined in claim 1, wherein the additive has a dipole moment greater than about 4 debye.
9. An ink composition as defined in claim 1, wherein the additive has a dipole moment greater than about 10 debye.
- 25 10. An ink composition as defined in claim 1, wherein the dye comprises a sulfonated dye.
11. An ink composition as defined in claim 1, wherein the dye comprises an acid dye.
12. An ink composition as defined in claim 1, wherein the ink composition
30 further comprises an organic cosolvent and a surfactant.
13. An ink composition as defined in claim 1, wherein the dielectric constant of the composition increases by at least 20% due to the presence of the additive.

14. An ink composition as defined in claim 1, wherein the additive comprises an amino acid or a derivative of an amino acid having a molecular weight of less than about 500.

15. An ink composition comprising:
5 a dye comprising a sulfonated dye or an acid dye;
a solvent for the dye, the solvent comprising water for forming an aqueous medium; and

an additive comprising an amino acid or a derivative of an amino acid, the amino acid or the derivative of the amino acid being a zwitterion, the
10 additive having a polarity greater than the polarity of water, the additive preventing the dye from coalescing in the solvent thereby increasing the solubility of the dye in the solvent.

16. An ink composition as defined in claim 15, wherein the additive is present in the ink composition at a mole fraction greater than about 0.004.

17. An ink composition as defined in claim 15, wherein the additive has a
15 dipole moment greater than about 4 debye.

18. An ink composition as defined in claim 15, wherein the additive has a dipole moment greater than about 10 debye.

19. An ink composition as defined in claim 15, wherein the additive
20 comprises glycine, lysine, taurine, beta-alanine, betaine, or mixtures thereof.

20. An ink composition as defined in claim 15, wherein the ink composition further comprises an organic cosolvent and a surfactant.

21. An ink composition as defined in claim 15, wherein the dye comprises a sulfonated dye.

22. An ink composition as defined in claim 15, wherein the dielectric
25 constant of the composition increases by at least 20% due to the presence of the additive.

23. An ink composition as defined in claim 15, wherein the additive comprises an amino acid or a derivative of an amino acid having a molecular
30 weight of less than about 500.

24. A process for printing on a substrate comprising:
ink-jet printing an ink composition onto a substrate, the ink composition comprising:

(a) a dye comprising a sulfonated dye or an acid dye;
(b) a solvent for the dye, the solvent comprising water for forming an aqueous medium; and

(c) an additive comprising an amino acid or a derivative of an amino acid, the amino acid or the derivative of the amino acid being a zwitterion, the additive having a polarity greater than the polarity of water, the additive preventing the dye from coalescing in the solvent thereby increasing the solubility of the dye in the solvent.

25. A process as defined in claim 24, wherein the ink composition is emitted by a printing head onto the substrate in the form of droplets, the printing head not contacting the substrate during the printing process.

26. A process as defined in claim 24, wherein the additive comprises glycine, lysine, taurine, beta-alanine, betaine, or mixtures thereof.

27. A process as defined in claim 24, wherein the additive is present in the ink composition at a mole fraction of from about 0.004 to about 0.04.

28. A process as defined in claim 24, wherein the additive has a dipole moment greater than about 10 debye.

29. A process as defined in claim 24, wherein the ink composition further comprises an organic cosolvent and a surfactant.

30. A process as defined in claim 24, wherein the additive comprises a sulfonic acid analog of an amino acid.

31. An ink composition comprising:

a dye;

a solvent for the dye; and

an additive comprising a zwitterion, the additive being present in the ink composition at a mole fraction of less than about 0.1, the additive having a polarity greater than the polarity of the solvent, the additive preventing the dye from coalescing in the solvent thereby increasing the solubility of the dye in the solvent.

32. An ink composition as defined in claim 31, wherein the additive comprises an amino acid or a derivative of an amino acid.

33. An ink composition as defined in claim 32, wherein the additive comprises glycine, lysine, taurine, beta-alanine, betaine, or mixtures thereof.

34. An ink composition as defined in claim 32, wherein the additive comprises a sulfonic acid analog of an amino acid.

35. An ink composition as defined in claim 31, wherein the additive is present in the ink composition at a mole fraction of from about 0.004 to about 0.04.

5 36. An ink composition as defined in claim 31, wherein the additive has a dipole moment greater than about 4 debye.

37. An ink composition as defined in claim 31, wherein the additive has a dipole moment greater than about 10 debye.

10 38. An ink composition as defined in claim 31, wherein the dye comprises a sulfonated dye and the solvent comprises water.